Fast optimization method : the window size and hurst parameter estimator on self-similar network traffic

Abstract

This paper describes a version of the fast optimization method (FOM) used to estimate the Hurst parameter (H) with appropriate window sizes in self-similar network traffic. Large or short window sizes, for example, may cause the results to become unreliable. Estimating window sizes requires that the estimation process be repeated, such as in iterative optimization method (IOM) and will result in the high consumption of CPU time. This paper empirically compares the CPU time and the estimation results using both the FOM and IOM methods. Finally, it shows that the FOM outperforms the IOM in that it significantly reduces total CPU time and maintains the reliability of the estimation results.